

MN512.21 Evaluation Procedures.

(a) Material Quality Evaluation Procedures.

(7) Shop drawings.

(i) *Definition:* The term "shop drawings" includes drawings, diagrams, layouts, schematics, descriptive literature, illustrations, schedules, performance and test data, and similar materials furnished by a contractor to explain in detail specific portions of the work required by the plans. It is furnished to: (a) provide details of fabrication and/or installation; or (b) to indicate the specific commercially fabricated item to be furnished to meet the requirements of the plans. Shop drawings for some items are indicated as being required by the drawings or specifications. Work requiring shop drawings shall not be installed until the shop drawings have been properly approved.

(ii) When shop drawings are furnished, the contractor must coordinate all such drawings and review them for accuracy, completeness, and compliance with contract requirements and indicate his or her approval thereon as evidence of such coordination and review. If shop drawings show variations from the contract requirements, the contractor must indicate such variations at the time of submission. Approval of the shop drawings does not relieve the contractor from responsibility for any errors or omissions in such drawings, nor from responsibility for complying with the requirements of the plans.

(iii) Shop drawings should be reviewed by the designer (i.e., the person who designed the item for which the shop drawings are being submitted).

(iv) Shop drawings shall be approved by the incumbent in the same position as that which approved the plans.

(v) When construction is performed under a federal or federally-assisted contract:

(A) The State Conservation Engineer (SCE), will approve shop drawings for plans approved by him or her, except that a Project Engineer (PE)/Government Representative (GR)/Contracting Officer's Representative (COR) may approve shop drawings for any item that meets all of the following requirements: (a) is not buried; (b) is not permanently below the water surface; (c) is not embedded in concrete; and (d) is not part of a facility designed by a consultant engineer. Representative items for which shop drawings may be reviewed and approved by a PE/GR/COR are fence gates, trash racks and guard rails, and forming plans. Representative items for which shop drawings must be reviewed by the designer and approved by the SCE include reinforced concrete pipe details, water control gate details, manhole and cover details, and details of items designed or specified by a consulting engineer.

(B) The PE/GR/COR shall review the shop drawings submitted by the contractor to see if they appear to meet the contract requirements. If they do not appear to meet the contract requirements, the shop drawings shall be returned to the contractor (through the contracting officer in federally-assisted contracts) with an explanation of why they will not be reviewed further.

(C) If the shop drawings appear to meet the contract requirements, and the PE/GR/COR has approval authority as indicated above, he/she shall: (a) review the shop drawings; (b) make appropriate comments or corrections, as necessary; (c) approve the drawings, if appropriate, subject to any necessary corrections; (d) return the marked shop drawings to the contractor (through the contracting officer in federally-assisted contracts); and (e) send a marked copy to the SCE.

(D) If the shop drawings appear to meet the contract requirements, and the PE/GR/COR does not have approval authority as indicated above, he/she shall send two (2) copies (three (3) copies if a consulting engineer is to review the shop drawings) with any comments to the SCE. The SCE will: (a) have the shop drawings reviewed and approved, if appropriate, with comments and corrections as necessary; (b) return one marked copy to the PE/GR/COR; and (c) retain one marked copy for reference. If a consultant is involved, the SCE will submit two (2) copies to the consultant for review and comment. The consultant shall return a marked copy with his or her recommendations to the SCE.

(E) The marked copy returned to the PE/GR/COR becomes the official NRCS copy, and shall be filed in the GR/COR contract file.

(F) The PE/GR/COR shall indicate NRCS approval on a copy, along with corrections and comments as necessary, and return it to the contractor (through the contracting officer in federally-assisted contracts). Additional marked copies shall be made and distributed as necessary.

(G) Materials must be examined on the jobsite, regardless of how they are evaluated initially. Materials may become defective as a result of improper storage, handling, or other causes.

(b) Generally, projects that incorporate material specifications require new material. In some cases "used material" not covered by material specifications can be used in CO-01 construction. For example, a "used" pipe may be acceptable for a farm crossing in a drainage ditch.

(1) Used material shall not be used for cost-shared components in cost-share programs unless approved by the SCE. The area engineer shall recommend to the SCE on a case-by-case basis whether used material should be used. The area engineer's recommendation and the SCE's approval shall be documented and placed in the design file. The documentation shall include an evaluation of material adequacy.

(2) Used material may be used during construction for temporary works of improvement, such as a stream crossing, if it is going to be removed after serving its purpose.

(3) The following used materials are approved for use:

- Heavy equipment rubber tires when used as a component of a livestock watering trough.
- Railroad ties when they are sound and free of rot and used as fence posts.
- Structural steel when approved by the designer for use in building frame construction.

MN512.23 Prequalification of Materials

(c) (iii) The list of approved prequalified materials for Minnesota is filed in Chapter 17 of the Engineering Field Handbook. The list is updated periodically.

Subpart D - Quality Assurance Activities

MN512.30 General.

(c) Quality assurance plans (construction inspection) shall be prepared and implemented for the following waste storage facilities: (1) All Class IV or V structures, (2) All structures constructed in the Karst region, and (3) All others deemed appropriate by the Area Engineer.

MN512.32 Quality assurance procedures.

(d) For each Class V job approved in the field, the responsible engineer or technician shall determine the degree of inspection required to insure acceptable results in each element of work, and shall consult with the responsible line officer to assure that appropriate personnel are assigned and scheduled accordingly. For each Class V job approved in the state office and all Class VI-VIII jobs, the state conservation engineer shall determine the degree of inspection required. The responsible line officer is to assign and schedule personnel accordingly.

(e) Natural Resources Conservation Service personnel shall not inspect or approve the installation of electrical pumps and other electrical machinery and wiring services to them. The electrical wiring shall be installed and inspected in accordance with the Minnesota Electric Act. The owner or electrical contractor shall properly request electrical inspection and furnish the serial number of the "Request of Electrical Inspection" as evidence he/she has complied with the Minnesota Electric Act.

Subpart E - Engineering Equipment, Records, and Coordination

§MN512.41 Records.

(a) Form SCS-ENG-310, Job Diary, shall be used for all works constructed under contract where federal financial assistance funds are paid. In addition, a job diary shall be kept for all structures that are subject to the Dam Safety Rules of Minnesota.

(1) Special effort should be taken to maintain high quality job diaries. The state and area engineering staffs will review diaries and offer comments during construction reviews.

(2) Instructions for completing the job diary shall be followed, as set forth in Part 517 of the National Contracts, Grants and Cooperative Agreements Manual.

(d) For Class I-V and low hazard Class VI projects, Conservation Assistance Notes or equivalent are an acceptable method of documenting construction